

SECTION 1 - DESIGN GUIDE OVERVIEW



Iowa Sustainable Design Initiative



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Guide Overview

What is Sustainable Design?



Defining Sustainable Design

The most popular definition of sustainability can be traced to a 1987 United Nations conference. It defined sustainable developments as those that “meet the needs of the present without compromising the ability of future generations to meet their needs.”

As defined by the World Commission on Environment and Development (the Brundtland Commission) in 1987.

Sustainable design is a philosophy for designing, constructing, and operating buildings to reduce negative impacts to the natural environment and to improve the quality of the built environment. Sustainable issues include water quality and conservation, energy production and energy efficiency, use of materials, indoor environmental quality, and sustainable site design. Addressing these issues quite often results in lower operating costs over the life of a building, and it is important to note that many sustainable design solutions do not add additional cost to a project.

While sustainable, often called green, design is a relatively new term, many sustainable solutions include building design and construction standards that have been considered good practice for a long time. Previously, however, they may not have been called sustainable.

Why Sustainable Design in Iowa?

Many cities and states are writing policies and guidelines for sustainable design. Integrating sustainable design solutions into projects will help Iowa move toward meeting some of the state's environmental goals. For example, an Energy Policy Task Force was created to research and provide recommendations for the future of sustainable policy in the state of Iowa. From these recommendations, a 2002 Comprehensive Energy Plan was created, entitled “Energy in Iowa: At a Turning Point.” Some of the goals of the Energy Plan include:

- reduce electric and natural gas consumption in Iowa by 20 percent and increase the amount of electric energy produced from renewable energy resources in Iowa by 10 percent;
- reduce aggregate energy consumption in state facilities to 20 percent below 2000 levels through energy efficiency improvements by 2008; and
- purchase at least 10 percent of the electricity for state government from renewable energy resources by 2005.

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The Iowa Environmental Council's 2002 Iowa Environmental Indicators lists the following goals:

- provide all Iowans with safe drinking water;
- pursue healthy and diverse grasslands;
- reduce Iowa's dependence on fossil fuels;
- use energy efficiently;
- minimize soil erosion;
- reduce Iowa's consumption of resources; and
- protect habitat for Iowa's bald eagles and other animals.

Sustainable design addresses all of these issues, thereby providing the means for building owners and designers to improve Iowa's environment. Sustainable design is often a win-win situation, providing environmental, health, and financial benefits. Some sustainable solutions can be implemented without an associated increase in cost.

Who Should Use This Guide?

This guide was written for anyone involved in the design, construction, and operation of buildings and their surrounding sites. This includes, but is not limited to, building owners, designers, contractors, facility managers, and building occupants. It is applicable to renovation and new projects, projects of all sizes, and projects of all types from schools to office buildings to laboratory facilities. The guide was written to be useful to individuals with varying levels of knowledge about sustainable design, ranging from the novice to the experienced professional. The content focuses primarily on non-residential construction. However, many of the processes and solutions presented are applicable to residential construction as well. In addition, resources specific to residential sustainable design are included.

When Should This Guide be Used?

Sustainable design is best integrated starting at the very beginning of the project. The earlier sustainable solutions are considered, the less possibility there is that they will impact project design, budget, and schedule. This guide will explain the sustainable design process. If you are well into design there are still sustainable solutions that you can incorporate.

What is Included in This Guide?

"The mission of the Iowa Department of Natural Resources is to conserve and enhance our natural resources in cooperation with individuals and organizations to improve the quality of life for Iowans and ensure a legacy for all. Sustainable building design is a holistic approach that supports this mission."

Jeff Geerts, Program Planner, Iowa Department of Natural Resources

"Construction debris recycling as a component of sustainable design, as a whole, is easy to implement. With some dedication it can save the client some money and provide a competitive bid advantage to the contractor. Construction debris recycling can be implemented on every project; in my mind it just takes some coordination and planning early on in the process."

Joe Rolwes, Project Superintendent, Conlon Construction Company, Dubuque Contractor for the National Mississippi River Museum & Aquarium

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The objective of this Sustainable Design Guide is to encourage the integration of sustainable design principles into the design and construction of as many buildings and their associated sites as possible in Iowa.

This guide provides:

- introductory sustainable design principles and benefits;
- information related to the cost of integrating sustainable design;
- an overview of the Leadership in Energy and Environmental Design (LEED™) Green Building Rating System;
- a process for integrating sustainable design into a typical design and construction process;
- sample sustainable design solutions that can be included on most projects, as well as additional solutions that should be considered on a project-by-project basis; and
- resources and contacts related to the goals and solutions presented.

How Should This Guide be Used?

Sections 2-5 provide introductory information about sustainable design. The reader may choose to skip one or more sections depending on their knowledge of sustainable design. Section 6 is a checklist that has been developed specifically for the state of Iowa. Information about how to use this checklist is provided at the beginning of Section 6. Sections 7 and 8 address Request for Proposals and Specifications. The Appendix includes resources that will be useful in identifying sustainable requirements for a project or for implementing sustainable design and construction practices.

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Advisory Committee

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